FIG. 1

DETAILED DESCRIPTION

FIG. 2A

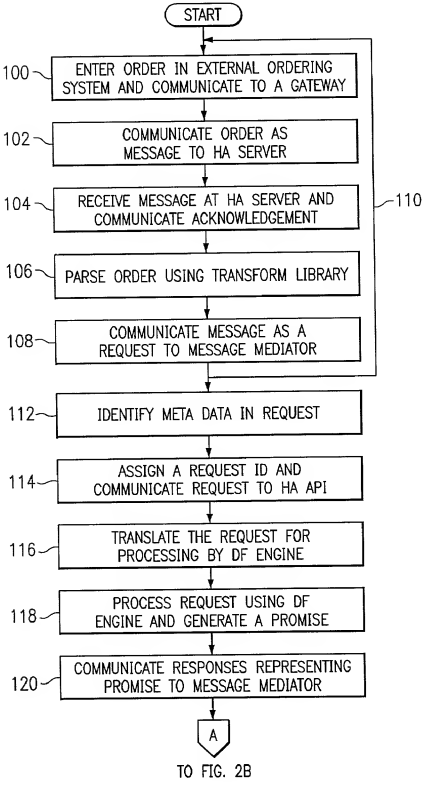
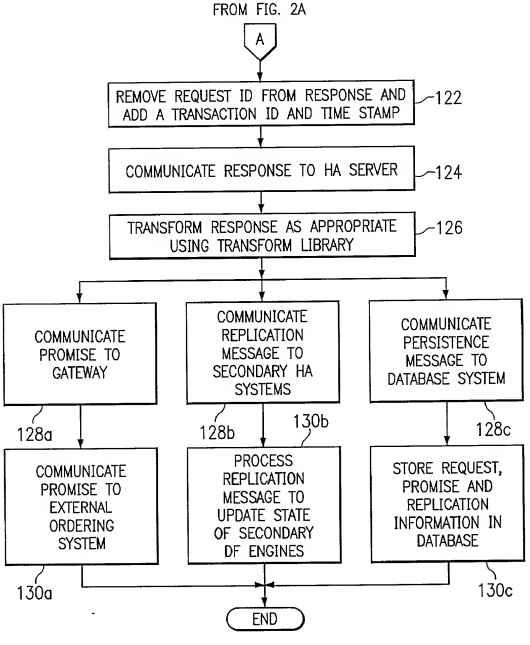

START
100
ENTER ORDER IN EXTERNAL ORDERING SYSTEM AND COMMUNICATE TO A GATEWAY
102
COMMUNICATE ORDER AS MESSAGE TO HA SERVER
104
RECEIVE MESSAGE AT HA SERVER AND COMMUNICATE ACKNOWLEDGEMENT
110
106
PARSE ORDER USING TRANSFORM LIBRARY
108
COMMUNICATE MESSAGE AS A REQUEST TO MESSAGE MEDIATOR
112
IDENTIFY META DATA IN REQUEST
114
ASSIGN A REQUEST ID AND COMMUNICATE REQUEST TO HA API
116
TRANSLATE THE REQUEST FOR PROCESSING BY DF ENGINE
118
PROCESS REQUEST USING DF ENGINE AND GENERATE A PROMISE
120
COMMUNICATE RESPONSES REPRESENTING PROMISE TO MESSAGE MEDIATOR
A
TO FIG. 2B

FIG. 2B


FROM FIG. 2A
A
REMOVE REQUEST ID FROM RESPONSE AND ADD A TRANSACTION ID AND TIME STAMP
122
COMMUNICATE RESPONSE TO HA SERVER
124
TRANSFORM RESPONSE AS APPROPRIATE USING TRANSFORM LIBRARY
126
COMMUNICATE PROMISE TO GATEWAY
COMMUNICATE REPLICATION MESSAGE TO SECONDARY HA SYSTEMS
COMMUNICATE PERSISTENCE MESSAGE TO DATABASE SYSTEM
128a
128b
130b
128c
COMMUNICATE PROMISE TO EXTERNAL ORDERING SYSTEM
PROCESS REPLICATION MESSAGE TO UPDATE STATE OF SECONDARY DF ENGINES
STORE REQUEST, PROMISE AND REPLICATION INFORMATION IN DATABASE
130a
130c
END

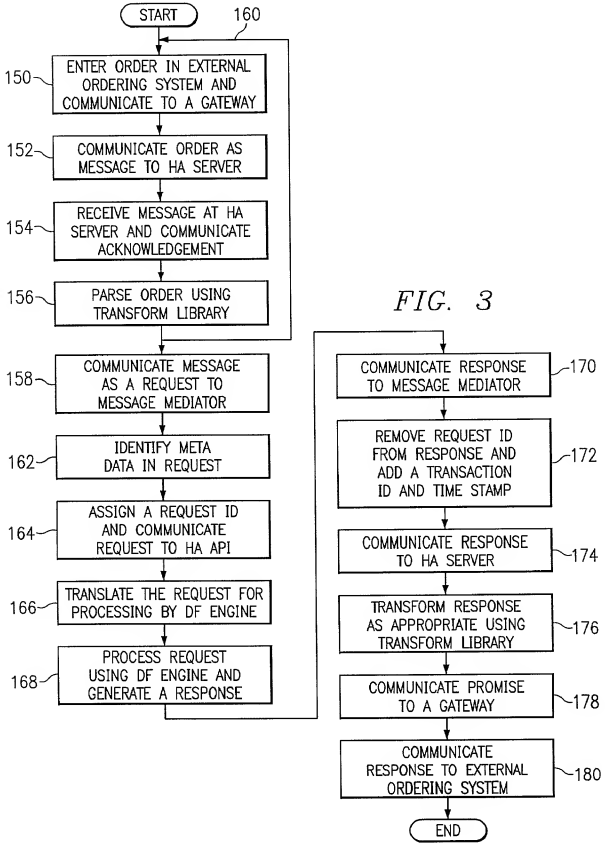
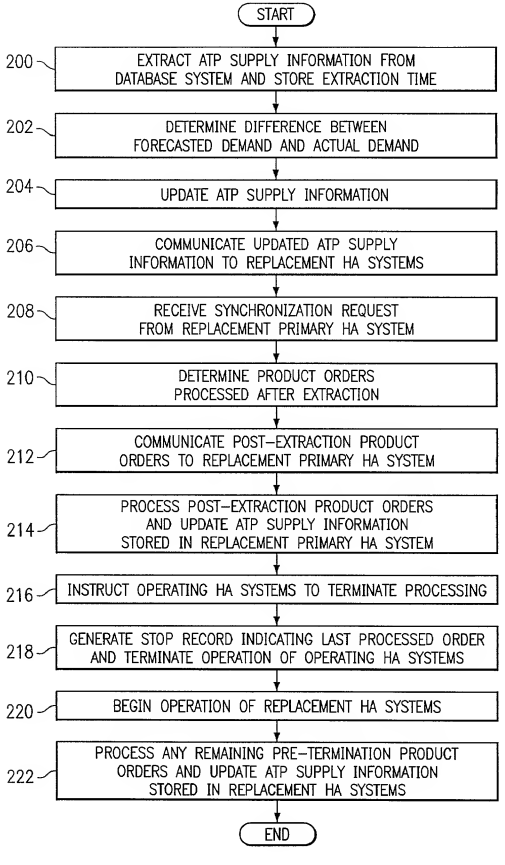

START
160
150
ENTER ORDER IN EXTERNAL ORDERING SYSTEM AND COMMUNICATE TO A GATEWAY
152
COMMUNICATE ORDER AS MESSAGE TO HA SERVER
154
RECEIVE MESSAGE AT HA SERVER AND COMMUNICATE ACKNOWLEDGEMENT
156
PARSE ORDER USING TRANSFORM LIBRARY
158
COMMUNICATE MESSAGE AS A REQUEST TO MESSAGE MEDIATOR
162
IDENTIFY META DATA IN REQUEST
164
ASSIGN A REQUEST ID AND COMMUNICATE REQUEST TO HA API
166
TRANSLATE THE REQUEST FOR PROCESSING BY DF ENGINE
168
PROCESS REQUEST USING DF ENGINE AND GENERATE A RESPONSE
COMMUNICATE RESPONSE TO MESSAGE MEDIATOR
170
REMOVE REQUEST ID FROM RESPONSE AND ADD A TRANSACTION ID AND TIME STAMP
172
COMMUNICATE RESPONSE TO HA SERVER
174
TRANSFORM RESPONSE AS APPROPRIATE USING TRANSFORM LIBRARY
176
COMMUNICATE PROMISE TO A GATEWAY
178
COMMUNICATE RESPONSE TO EXTERNAL ORDERING SYSTEM
180
END

FIG. 3

EXTERNAL SYSTEM
40a
EXTERNAL SYSTEM
40b
EXTERNAL SYSTEM
40n
GATEWAY
52a
GATEWAY
52n
MESSAGE BUS
50
MESSAGE MANAGER
54
DATABASE SYSTEM
60
PLANNING ENGINE
80
PRIMARY HA SYSTEM
20a
SECONDARY HA SYSTEM
20b
SECONDARY HA SYSTEM
20n
70a
PRIMARY HA SYSTEM
20a'
SECONDARY HA SYSTEM
20b'
SECONDARY HA SYSTEM
20n'
70b

FIG. 4

FIG. 5


START
200
EXTRACT ATP SUPPLY INFORMATION FROM DATABASE SYSTEM AND STORE EXTRACTION TIME
202
DETERMINE DIFFERENCE BETWEEN FORECASTED DEMAND AND ACTUAL DEMAND
204
UPDATE ATP SUPPLY INFORMATION
206
COMMUNICATE UPDATED ATP SUPPLY INFORMATION TO REPLACEMENT HA SYSTEMS
208
RECEIVE SYNCHRONIZATION REQUEST FROM REPLACEMENT PRIMARY HA SYSTEM
210
DETERMINE PRODUCT ORDERS PROCESSED AFTER EXTRACTION
212
COMMUNICATE POST-EXTRACTION PRODUCT ORDERS TO REPLACEMENT PRIMARY HA SYSTEM
214
PROCESS POST-EXTRACTION PRODUCT ORDERS AND UPDATE ATP SUPPLY INFORMATION STORED IN REPLACEMENT PRIMARY HA SYSTEM
216
INSTRUCT OPERATING HA SYSTEMS TO TERMINATE PROCESSING
218
GENERATE STOP RECORD INDICATING LAST PROCESSED ORDER AND TERMINATE OPERATION OF OPERATING HA SYSTEMS
220
BEGIN OPERATION OF REPLACEMENT HA SYSTEMS
222
PROCESS ANY REMAINING PRE-TERMINATION PRODUCT ORDERS AND UPDATE ATP SUPPLY INFORMATION STORED IN REPLACEMENT HA SYSTEMS
END